Research brief

Quantifying a Relationship Between Place-based Learning and Environmental Quality

Can education programs improve the environment?

YES. This study provides evidence that education can be a viable approach for achieving measurable improvements in environmental quality. Given the lack of prior research linking education and environmental improvement, finding such a high number of programs (46% of the study sample) reporting credible, measurable improvements in either physical or proxy air quality indicators was an exciting outcome.

What instructional methods are associated with EQ improvement?

Based on the findings of this study, educators with a goal of addressing environmental quality issues should consider integrating the following practices into their program design:

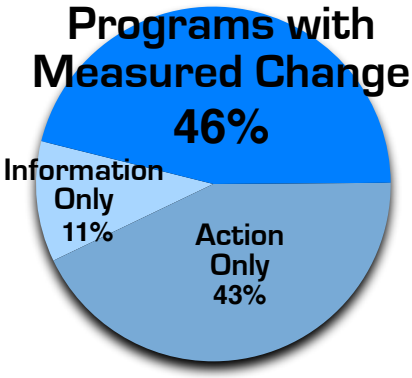
- **Measurement** of environmental quality indicators (physical or proxy) before and after an education program activity;
- **Service-learning** projects that engage participants in **real-world issues** in their local communities and environments;
- Building **collaborative relationships** with individuals and organizations that can provide support and resources.

The programs in this study that included more place-based learning practices (such as those above) were more likely to report measurable improvements in air quality (r=.40, p<.01).

What are the policy implications?

The findings suggest that education could be an effective dimension of government and NGO conservation projects. Policy makers should consider a new category of financial support for projects that actively attempt to improve environmental quality through education programs. Education programs may be able to deliver significant benefits at relatively low costs. Support should be provided for research that further describes the connection between education and environmental quality.

Types of Outcomes of Air Quality Education Programs in This Study



Education Program Snapshots

East Valley (WA) Middle School
Students monitored school indoor air quality and worked with school administrators to implement structural changes resulting in improved carbon dioxide, air flow, particulate levels, odors, and mold.

Exeter (NH) High School
Students studied air quality issues and monitored car pooling and bus idling in the school drop-off area. Program led to a no-idling policy and installation of no-idling signs.

About the study

During 2007-2008, the project team collected and analyzed data from in-depth, highly structured interviews with representatives of 54 air quality education programs from the United States and Canada. Funding was provided by the U.S. Environmental Protection Agency's Office of Environmental Education. Project partners were the National Park Service Conservation Study Institute in cooperation with Shelburne Farms; the Center for Place-based Learning & Community Engagement; Adopt-A-Watershed; Program Evaluation and Educational Research Associates; Antioch University New England; and Massachusetts General Hospital. A full report of the study is available at www.PEECworks.org.

Photo credits: Row 1: Fabio Marini, Mack Wong. Row 2: Skyseeker (both photos).